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UNITED STATES NAVAL POSTGRADUATE SCHOOL



A Term Paper

The Practic^ability of Standardizing
Technical and Catalog Organizations
at Supply Demand Control Points

By

J. T. Robison

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THE FEASIBILITY OF STANDARDIZED TECHNICAL AND MATHEMATICS EXAMINATIONS
AT SUPPLY AND CONTROL POINTS

A Term Paper

Presented to

The Faculty of the Management School

U. S. Naval Postgraduate School

In Partial Fulfillment

of the Requirements for Completion

of the Management Course

Submitted by
LORD J. G. Robinson, SC, USN

May 1959

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Set all things in their own peculiar place,
And know that order is the greatest grace.

DRUM

REPORT

The selection of the topic "The Feasibility of Standardizing Technical and Catalog Organizations at Supply Demand Control Points" as a management paper is based on personal experience in participation in this particular area at a Navy Supply Demand Control Point, the existence of diverse technical and catalog organizations at the several Supply Demand Control Points in the face of a standard organization for these functions, and an interest in the factors supporting these existing organizations from the viewpoint of the organizational principles involved.

The author is aware that because of the widely varying organizations for technical and cataloging functions at all Supply Demand Control Points, the Bureau of Supplies and Accounts is giving consideration to revising the standard organization for these functions as well as other related functions. The purpose of this paper is to make an objective study of existing technical and catalog organizations and on the basis of their objectives, practices, and operating procedures determine the feasibility of a standard or "ideal" organization structure for these functions. Although remote and comparatively infinitesimal in scope, it is felt that this study may serve as a worthwhile contribution toward that ultimate goal -- the strengthening of our power for the defense of our nation.

To some extent this study will reflect personal ideas and impressions. However, insofar as possible, the findings and recommendations of this study will be based upon the guiding principles set forth by

activities or organization and management and the interpretation of information provided by specific Supply Demand Control Points. The author is indebted to the Electronics Supply Office, General Stores Supply Office, Ordnance Supply Office, Submarine Supply Office, and Training Devices Supply Office for their contribution of information without which this study could not be made.

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CHAPTER I

INTRODUCTION

Purpose of Study

The purpose of this study is to determine the feasibility of a standard organization for technical and catalog functions at Supply Demand Control Points. For the uninitiated a Supply Demand Control Point, referred to hereinafter as a SDCP, is an inventory control activity established to administer the Navy supply system for categories of material as assigned by the Bureau having over-all responsibility for the material involved. Each SDCP is under joint control of the Bureau of Supplies and Accounts and the technical bureau having prime responsibility for the material administered by that SDCP.

During the past few years there has been an organizational trend to deviate from the standard SDCP organization prescribed for technical and catalog functions by the Bureau of Supplies and Accounts. Today, not a single SDCP conforms with this organization. On the basis of these deviations, which have been justified and approved, it is apparent that the existing standard organization for those functions is no longer applicable.

In view of increasing complexity and demands for responsiveness in the field of logistics support it is altogether probable that an organizational structure must be considered solely from the viewpoint of the SDCP command. On the other hand, in view of the increasing complexity of many technical and catalog functions, it appears that an "ideal"

organization applicable to all cases may be recommended. In any event, the magnitude of these operations, in terms of man-power alone, provides sufficient stimulus for the study of present functions and organization structure in the light of generally accepted principles of organization. The magnitude of this effort can be appreciated by the fact that of the entire civilian personnel strength of SSGS, which totals approximately 7,500, at least one-third is assigned to technical and catalog operations. The payroll for this segment is conservatively estimated to be \$12,000,000 per year.

No specific problem can be pointed out as a result of this pattern of organization. Essentially, the problem is whether this trend is sound from an organization point of view. Or more important - is this deviation to the best interests of the Navy?

The urge to standardize is universal among organizations - perhaps to a fault. Nevertheless, there is value to standard organization. Within the principles of organization developed by the Army Service Forces during World War II there are three reasons for adhering to a standard pattern of organization:

1. To simplify organizational relationships and procedures by conforming organization structure to a logic 2, hierarchical pattern, based on one fundamental plan of organization.
2. To standardize organizational structure at all levels to as great an extent as possible, on the basis of the most effective organizational pattern.
3. To provide a simple basis for general understanding and recognition of the exact location of responsibilities at all levels of the organization.¹

¹Emergency Management of the National Economy, Principles of Administration, Volume IV, Industrial College of the Armed Forces, Washington, D. C. p. 12.

General Approach

The approach to this study is patterned after the outline established by Wilfong and Lane for the general approach and steps to be followed by the "Administrative Analyst in Solving a Problem". The sixth step, that of installation and follow-up of recommendations, has to be omitted. This approach is:

1. Preliminary planning and background development, including determination of proper scope and level of survey.
2. Collection of factual information and data.
3. Analysis and interpretation of data.
4. Development of solutions and recommendations.
5. Preparation of final report.²

²John H. Wilfong and S. Owen Lane, A Manual for Administrative Analysis (Chicago, Illinois: G. Brown Company, 1941), p. 1.

CHAPTER II

PRELIMINARY PLANNING, BACKGROUND DEVELOPMENT, AND SCOPE AND LEVEL OF STUDY

The preliminary planning and background development for an organization study requires a review of the basic principles of organization, the study of various types of organization, consideration of the principal bases for specialization in building up an organization, the review of regulations, and the establishment of a methodology necessary to conduct an organization analysis. The viewpoints of several recognized authorities on organization and management in regard to the organization structure appear below. For the purpose of conducting this analysis principles of management considered to be applicable to the situation at hand are presented.

Organization Structure

Lippert and Thurston place a great deal of emphasis on the importance of the organization structure. They express the value of organizational structure as follows:

Organization structure is one of the most, if not the most, important foundation of efficient and effective operations. From it come all the other forms of management control. All are important, and efficient operations are inseparable with the laws of management. Sound, scientific organization structure is essential to allow them all to operate with full power.²

²Frank L. Lippert and John B. Thurston, *Principles of Management* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1955), p. 22.

Division of Work

Grouping activities into major operating departments is the most obvious and usually the first thing to consider in establishing an organization structure. In regard to effective departmentation, Hermon has the following to say:

Fundamentally, the administrator must seek a division of activities that provides the greatest advantage of specialization, facilitates control, aids in coordination, secures adequate attention to important activities, recognizes local conditions, develops people, and keeps expenses low.²

He also emphasizes the following in regard to organization structure:

An additional point that should be given careful consideration in establishing an organization structure is the desirability of creating primary departments on a consistent basis. Thus, if most operating activities are divided among territorial divisions, there is a distinct advantage in having all operating activities classified territorially. Or, if the primary departments are functional in character, then the consistent use of a functional classification is likely to result in a simpler organization structure.³

Hermon indicates that it is not always practical to follow one basis of departmentation, as there are certain situations where local conditions outweigh the advantages of the single, consistent basis of work division. In these instances he provides this cautionary note:

Each time this is done the organization structure is made more complex. It is often harder to establish a "chain of command" in generalizability and, consequently, control is more difficult. Frequently special provisions for coordination are required. For these reasons a consistent basis for departmentation of operating activities is desirable, though it is not always essential.⁴

²William H. Hermon, Administration Action (New York: Prentice-Hall, Inc., 1951), p. 283.

³Ibid., p. 283.

⁴Ibid., p. 284.

In our approach to the structural aspect of organization, a great deal of emphasis has been placed on the division of activity effort. Once again it may be beneficial to carry this too far. Alfred and Batty, in their treatise on development of an industrial organization, provide the following directions:

Although work division is the foundation of organization, it has major limitations beyond which it should not be carried. These limitations are, first, no advantage is gained by subdividing work so minutely that the time consumed in handling between workers, exceeds that saved by specialization. Second, technical and custom make it impractical to subdivide certain kinds of work, although the influence of these factors is subject to change. Third, subdivision must not be carried to the point where the losses, due to the increased difficulties in coordinating the efforts of the individuals, exceed the gains due to work division. Fourth, subdivision must not be carried to the point of organic division, i.e., where the time necessary to do the subdivided work required only a fraction of the full time of a man and related tasks were not available in adjacent locations.⁵

The Chain of Command

An understanding and utilization of the scalar or chain-of-command is necessary for effective organization. Fayol describes chain of command as "the chain of superiors ranging from the ultimate authority to the lower ranks. The line of authority is the route followed - via every link in the chain - by all communications which start from or go to the ultimate authority."⁶

⁵ A. P. Alfred and H. Donald Batty, Evolution of Industrial Management (New York: The Ronald Press Company, 1931), p. 111.

⁶ Henri Fayol, General and Industrial Administration (New York: Pitman Publishing Corporation, 1937), p. 34.

The Staff

Every business organization is considered to require the performance of auxiliary or staff functions. Line and staff functions are defined as follows:

It is the function of the staff usually to counsel; that of the line, and the line only, to command....The line exercises the authority of management; the authority of ideas....The (the staff's) function is to be informative and advisory with respect to both plans and their execution. This is implicit in the meaning of the word "staff", which is something to support or lean upon but without authority to decide or initiate.⁷

The Span of Control

No discussion of organization is complete without consideration of the principles of the span and level of management control. L.L. Gillmer offers the following in regard to this facet of management:

Another principle of importance in determining responsibilities is that which established the limitations of the number of positions that can be coordinated by a single executive. This is usually referred to as the principle of span of control. The limitation depends upon the degree to which subordinate positions are dissimilar and interdependent, upon the complexity of duties of each of the positions to be coordinated, and upon the stability of the business and the frequency with which new types of problems arise....It is generally agreed that if two functions that are being coordinated are interdependent and dissimilar, then the span of control should not exceed five.

The span of control and the number of supervisory levels of the organization are interrelated - the smaller the span, the greater the number of levels. If the number of levels is too great, communication is impeded, unity is jeopardized, and the organization tends to become slow moving and inflexible....A well designed organization of the centralized or independent type should not have more than six levels; the span of interdependent positions reported to any one executive should not exceed six; the span at the top should be less than five.

⁷Department of Management of the National Academy, Principles of Administration, Industrial College of the Arms and Ammunition, p. 22.

⁸Ibid., p. 23.

The Ideal Organization

Major considerations in organizational design are the organization's structure if it is necessary to first design an "ideal" organization. Dale points to the importance of the ideal organization for reorganization purposes as follows:

Perhaps the most important step in the reorganization process is the construction of the "ideal" organization (the word "ideal" is not used here in the "perfect" sense, but the most desirable as compared with the existing organization). Construction of the ideal organization should embody the best thinking of those who have written on the subject and the best practices found in industry.²

Koussis and O'Donnell support the creation of an ideal organization in their presentation on the need for organization planning:

Presumably there is a best way to organize, and it is a function of planning to discover and create the proper structure. The absence of comprehensive planning often accounts for confusion, overlapping in new lines. Many organizations are unable to keep their counts or to change because changes occur faster than they can be realized. While this factor may be due to emergency or planned changes in personnel, it is more often evidence of lack of planning or, perhaps, the failure of action before adequate planning could come to fruition.³

Many Policy

The value of a standardized organization structure as well as the organization of organizational flexibility, which enables each unit to meet its own requirements, is recognized by the Bureau of Commerce and Agriculture. In regard to these two aspects of organization the following statement is contributed by the Bureau of Commerce:

Standardized organization structure is a necessary condition for the efficient operation of a business enterprise. It is a condition which is essential to the success of a business enterprise.

20. Koussis and O'Donnell, *Organization and Management*, (New York: McGraw-Hill, 1950), p. 170.

The purpose of the proposed organizational structure is to provide a solid basis for the planning of business, the efficient use of organizational resources, and the execution of business in the most effective manner. It is a statement of the organization and the facilities for the execution of business.

The organizational structure will be developed by a committee of the top organizational personnel and the chief executive officer of the corporation. When the personnel are informed, activities will avoid over organization and excessive layering of responsibilities by limiting their organization to the major organizational components. Consistent with the principles of good management, each unit will stop at any level of organization or merge related organizational components as required by the mission of the activity, functional workload, and personnel requirements. However, any such deviations from the standard organization will be submitted to the Bureau of Supplies and Accounts for approval....¹¹

The Dynamic Nature of Organization

All authorities agree that most organization planning is a continuing job that requires reorganization, assuming it is needed, is only the first step, since there must be continual modification and adjustment as the business grows and changes. A significant testimony to the dynamic nature of organization can be seen through the changes among the SDPs included in this study. As of this writing, action has often been planned or taken for the initiation of one SDP and the transfer of all functions to other SDPs. Another SDP has been previously selected and will share its cataloging function with still another SDP. And still another SDP is coming; its own cataloging function for the first time; this function having been performed in the past by another cataloging activity. From the above it is apparent that this lack of continuity in the SDPs illustrates the dynamic nature of a centralized organization of order and control. On the other hand, the conclusions of these studies are such that they are possibly responsible to reorganization.

Scope of the Study

The scope of this study is limited to those functions normally assigned to the Technical Division and the Control Division by the Bureau of Supplies and Accounts. These functions are performed jointly with other organizations, a review of these areas is made to the extent feasible. The depth of study is limited to that which can be gleaned from documentary analysis. Time has precluded the exploration of uncertain areas of operation or the collaboration with knowledgeable persons on new or revised concepts of SDCP organization.

Notice to Reader

In order to analyze existing SDCP organizations and functions, it is necessary to go into considerable detail. These details are included as a part of this paper in order to show the areas covered and to validate the conclusions and recommendations of the study.

The reader who has neither the time nor the interest to delve into the organization functions and data presented and analyzed in Chapters III and IV can follow the continuity of this paper by reading those chapters and referring directly to Chapter V, Development of Relations and Recommendations.

CHAPTER III

FACTUAL INFORMATION AND DATA

Source of Information

In order to analyze the technical and catalog organization structure and functions of a SDOP, it is first necessary to collect and present the information that best represents these organizations. The basic information necessary for this paper is furnished by five Supply Demand Control Points - Electronics Supply Office, General Stores Supply Office, Ordnance Supply Office, Submarine Supply Office, and Training Devices Supply Office. These organizations represent almost one half of the inventory control points in the Navy Supply System. This information consists essentially of organization charts, personnel listings, and specific operating procedures and practices selected as being representative of SDOP organization and operation. Information utilized for this study was also obtained from the Bureau of Supplies and Accounts Manual and from writings of recognized authorities in the field of management.

Nature of Data

For purposes of this study the five SDOPs selected may be considered in the aggregate to represent a composite SDOP. On this basis it follows that the sum total of information and data presented is far more representative than if it were derived from a single source. The supply items carried and the degree of equipment support indicated by

these inventory control policies differ widely, ranging in nature from the general to the highly specific. The basic areas reviewed for this study are:

- The SDPP mission, SDPP functional statement, and SDPP organization chart down to and including the branch level of each division.
- Organization chart of technical-catalog organizations down to and including unit level.
- Detailed functional statement of technical-catalog organizations for each organizational segment down through unit level.
- Staffing pattern of technical-catalog organizations including civilian personnel classifications and grade.
- Operating instructions or a description of the following functions:

Provisioning of new equipments or components.

Technical library practices including obtaining and storage of manufacturer's drawings, standards, etc., for both technical and catalog use.

Maintenance of technical and catalog records.

Publication policy, i.e., format and frequency of publication, nature of data published.

Item identification for Federal Catalog Program.

Work measurement data.

Stock coordination.

It is obvious that a detailed comparison of all technical-catalog functions would be impracticable. However, it is believed that an understanding of organizational similarities and differences can be gained through comparison and analysis of the data appearing above.

The term technical-catalog functions will be used in a singular sense throughout this paper. Though separate functions be defined, they tend to blend together or overlap making a clear delineation of the two rather difficult.

Before and during the technical and catalog comparison and functions of a SSCP, it is necessary to understand the initial pattern for organization - the standard organization and functions prescribed by the Bureau of Supplies and Accounts. This standard organization is presented in Figure (1-1). An organization chart for all SSSs included in this study is presented as Figure (1-1, 1-2). A comparison of organization structures of technical and cataloging organizations is presented as Figure (2-1, 2-2, 2-3). A resume of other information and data which has been extracted from the basic data furnished by SSCPs included in the study is presented below.

Functional Missions

The functional mission assigned specifically to each SSCP by the Bureau of Supplies and Accounts is as follows:

Electronics Supply Office. Perform inventory control functions in accordance with the instructions and definitions as issued by higher authority.

General Stores Supply Office. Exercise Navy inventory management over material assigned to its control.

Grain and Supply Office. Perform inventory management functions for items under their cognizance.

Submarine Supply Office. Perform inventory management functions for items or categories of material under their cognizance.

Training Devices Supply Office. Insure that a proper balance is maintained between the supply of and demand for material under its inventory control.

The Bureau of Supplies and Accounts Manual, with reference to all SSCP, assigns their functional mission as follows: Supply Control Control Points do not maintain stocks of material but are offices, the function of which as stated in general terms is to assure a proper balance between

the supply of and the demand for individual items of material required for the operation and maintenance of the Naval Establishment.¹

Functional Tasks

The general functional tasks applicable to all SDCPs which are necessary for the attainment of their functional mission are outlined by BuSanda.² Those tasks that are directly related to technical-catalog functions are:

- determine or assist in determining items to be stocked.
- carry out intensive technical research program in order that all material under its inventory control cognizance and such other material as may be designated may be identified, cataloged, and stock numbered and that interchangeability between items may be established.
- participate in provisioning actions or technical support requirements, recommend procurement of repair parts and components, and schedule the delivery of these parts and components as designated by the technical bureau or office.
- recommend to BuSanda with information to other bureaus and offices, as appropriate, the transfer of cognizance of material which may be inappropriately stocked by the SDCP or other SDCPs or technical bureaus or offices.

These functional tasks are supported in terms of SDCP functional statements which follow.

¹United States Navy, Manual of Supplies and Ordnance Manual, Volume I, Par. 11062-1, Change X2.

²Ibid.

Major Technical-Catalog Functions

A comparison of the major functions performed by each SDCP reveals that many are common to all technical-catalog divisions. Except where noted, these functions are:

- Identifies items to establish support or non-support of the material and determines preferred and standard items of stock.
- Determines interchangeable or substitute items when appropriate.
- Performs functions pertaining to material cognizance matters and departmental and interdepartmental standardization programs.
- In coordination with the stock control division, assists in the determination of range and quantity of repair parts to be included in provisioning documents. (less GSSC)
- Establishes allowance lists and repair parts lists.
- When necessary, provides specifications for preservation, packaging, pecking, and marking of material.
- Maintains a complete, current technical library on material as required by the mission of the SDCP.
- Conducts technical analysis necessary for the determination of requirements by the stock control division and recommends procurement of material.
- Maintains the master item identification file.
- Develops description patterns and prepares item identifications.
- Obtains or assigns stock numbers for items under cognizance of the SDCP.
- Responsible for the layout, and printing of the Navy Stock List of the SDCP and allied publications issued by the SDCP. (GSC compiles only)
- Maintains liaison with the Armed Forces Supply Support Center, Office of Navy Material, and BuSaad in implementation of cataloging directives.

Several functions appear to be peculiar to certain SDCPs. Some of the major functions within this category are:

- Development and maintenance of population and value lists (GSC).

- Determines the final cost and schedule for the support the development and production of the contract type. Arranges for the contractor for equipments (OSO).
- Coordinates and implements provisioning and allowance program (OSO).
- Interprets and implements equipment support policy (OSO).
- Maintains liaison with bureaus, SDCPs, other agencies as related to provisioning, allowances, and continuing equipment repair parts support policy for SDCP program supported equipment (OSO).

Material Missions

In addition to functional missions, a material mission is assigned to each SDCP. Material missions and representative equipments are as follows:

Electronics Supply Office. Material assigned to the responsibility of the Electronics Supply Office consists of: (1) electronic equipments, (2) electronic, electrical or mechanical repair parts (except common type items identified by other cognizance symbols) required for the support of assigned electronic equipments, (3) common electronic parts used on all equipments, and (4) associated test equipment. Representative of the equipments supported are: radio, radar, sonar, teletype, and teleprinter equipments used afloat or ashore; fire control radar equipments.

Ordnance Supply Office. Material assigned to the Ordnance Supply Office is designated as Cognizance Symbol "E" material and consists of: (1) ordnance equipments, and (2) the ordnance repair parts required for support of those equipments. Representative of the items supported are: gun mounts and gun turrets for use on ships and ashore, mortars, projectors, rockets, and launching devices for rockets and grenades; guns, mounts, and accessories designated as aviation ordnance equipment; and

ordnance; special weapons; other supplies.

General Stores Supply Office. Material assigned to the General Stores Supply Office are based on specific criteria and are identified by commodity. In general this material is of a common nature and is characterized by being identified under federal or military specifications or by commercial specifications and standards, has sufficient descriptive nomenclature for procurement, etc. Material assigned to this inventory control point is represented by fiber rope, cordage, twine; office supplies; lumber; paint; paper; iron and steel; and handtools.

Submarine Supply Office. Material assigned to the supply management of the Submarine Supply Office and designated cognizance symbol "SP" material consists of: (1) submarine equipments, (2) submarine repair parts including peculiar related accessories and consumables for submarine use, (3) nuclear equipments installed on submarines and surface vessels, and (4) nuclear repair parts required to support nuclear equipments. Among these equipments supported are: propulsion, power generation and distribution, auxiliary motors and controllers, hydraulic systems, torpedo and mine handling equipment, and nuclear refueling equipment.

Training Devices Supply Office. Material assigned to the Training Devices Supply Office is identified as cognizance symbol "TD", and consists of repair or replacement parts, except repair parts derived under other cognizance symbols, required for the operation and maintenance of training devices. Representative of equipments supported are: training devices used in aviation, surface and sub-surface training; communications training; argument training.

Summary

An analysis of civil service classifications appearing on the official personnel listings of the various SDOPs indicates a predominance of Equipment Specialists and Supply Cataloger classifications. These classifications are augmented by such supporting classifications as General Engineer, Allowance Specialist, Preservation and Packaging Specialist, Illustrator, Supply Catalog Clerk, Clerk, and Clerk-Typist.

The predominant technical classifications are of the occupational speciality characterizing the SDOP concerned, i.e., Equipment Specialist (Electronics) at the Electronics Supply Office, Equipment Specialist (Ordnance) at the Ordnance Supply Office, etc.

In general, the civil service grade at the working level within the technical-catalog organizations is higher than the working level at other primary operating divisions. At each "technical" SDOP, i.e., the equipment support activities such as USSO, SSCO, LSCO, and EDCO, the numeric strength of the technical-catalog division(s) closely approaches 50% of the total personnel strength. The ratio of catalog and technical personnel to complement at USSO, the "non-technical" SDOP, is substantially lower.

The ratio of supervisory personnel to non-supervisory personnel and the grade structure at the various organizational levels are consistent throughout all SDOPs. Classifications of senior supervisory personnel at the division and branch level are usually the same as the predominant classification of the division or branch. These classifications are Supervisory Equipment Specialist; Supervisory Cataloger; Supervisory Engineer; Supervisor, General Supply Officer; Supervisory Allowance Specialist; Supervisory Preservation and Packaging Specialist; Supervisory Publications Editor; and Editorial Clerk, Supervisory.

The personnel classifications assigned to technical-control functions is as follows:

<u>Function</u>	<u>Classification</u>
Item Application Analysis	Equipment Specialist
Material Identification	Equipment Specialist, Supply Cataloger
Preservation and Packing	Preservation Specialist
Standardization	Engineer, Equipment Specialist
Allowance and Load List	Allowance Specialist, Equipment Specialist
Item Identification	Supply Cataloger
Compilation and Distribution	Supply Cataloger, Publications Editor

Functions above represent the functional group established by the DuSaud Work Measurement guide. These functions are not as well defined as might be indicated since they tend to overlap and are duplicative in several operations. However, they are considered to be adequate for purposes of this presentation.

Military personnel exercise line supervision over each Division and serve to a limited extent in a line and advisory capacity at other levels of supervision. The number of military personnel does not exceed 3% of any organization. Inasmuch as supervisory positions are being considered from a functional rather than a military viewpoint, a further study of military personnel is considered unnecessary.

Work Management

A General Work Management Program is administered at each SDGP in accordance with DuSaud Publication 205. In terms of unit description, unit count, productive hours, back log, etc., the program is uniform throughout all SDGs. A standard format is used in recording data.

Provisioning

Provisioning is defined as a technical-supply determination made at the time of purchase of a major equipment of the range and quantity of repair parts required to support that equipment for a given period of time.³ This is a major function at all SDCPs except the General Stores Supply Office. Basic provisioning functions and the assignment of responsibilities are similar throughout the technical SDCPs with one exception. In general the coordination of the provisioning process is assigned to the System Planning Division with the detailed technical-supply determination being assigned jointly to the Technical Division and the Stock Control Division. In the case of the Electronics Supply Office, it appears that all provisioning actions, including the planning and coordinative functions, are assigned to a single division - the Equipment Support Division - organized specifically for the provisioning function.

Stock Coordination

Stock coordination is defined as a technical-administrative process by which an item, group or category of material, is identified and assigned to one of the SDCPs.⁴ Formal agreements, generally standard in content and format, exist between all SDCPs as to how and under what circumstances the cognizance of material is to be assigned or transferred from one SDCP to another. This function is performed by the Material Determination Branch, Technical Division, of each SDCP.

³United States Navy, Supply Support of the Navy, Newport Publication 240, p. 30.

⁴ibid., p. 27.

Item Identification

One of the important aspects of a supply system is the identification of the stock items to be carried by the inventory manager. Under the Federal Catalog System this process of identifying stock items is known as item identification. Item identification is performed by all SDCPs. This function, as well as related catalog functions required by the Federal Catalog System, is performed by one organizational branch within the Technical Division. In each instance, the detailed procedure for item identification is built into the framework of an organization structure that differs among the SDCPs studied. Item identification is performed by the following organizational units:

- ECG - Item Identification Branch, Equipment Support Division.
- GS20 - Compilation Branch, Catalog Division (proposed).
- OSD - Material Identification Section, Technical Branch, Special Weapons Division and Material Identification Branch, Technical Division.
- SDO - Identification Branch, Technical Division.
- TDCO - Catalog Branch, Technical Division.

Technical Library

A technical library, normally identified as the Technical Data Branch or assigned as a primary part of the Technical Data Branch, is maintained by all SDCPs. With the exception of one SDCP where this unit is assigned to the Administrative Services Division, the technical library is a part of the Technical Division. The primary function of the technical library is control over the receipt, maintenance, and issue of technical data. Technical data consists primarily of blueprints, drawings,

manufacturer's catalogs and parts books, government drawings and publications, specifications, and related technical information. Overall functions of each technical library are similar though the actual operations vary in detail. Organization, name, and location of the technical library at each SDSP is as follows:

- ESO - Technical Data Branch, Administrative Services Division
- GS20 - Technical Data Branch, Technical Division
- OS0 - Technical Data Branch, Technical Division
- SS0 - Material Determination Branch, Technical Division
- TG00 - Research and Technical Data Branch, Technical Division

Technical and Catalog Records

Technical data files consisting of both manual records and EAC card records are maintained within the division(s) performing technical-catalog functions. Technical records are known variously as the Master Technical Item File, Master Item Identification File, Master Technical Record, Master Description Card, and Technical Data Card at the SDSPs staffed. These records are maintained manually and are designed to serve as a master record for all technical information required by the SDSP. The master records vary in format and in detail but in general portray such information as stock number, part number, manufacturer, description of item, interchangeability, equipment application, weight, price, etc. The majority of items appearing on master records are common to all SDSPs. Manual and EAC catalog records are also maintained by each SDSP. These records are part of the Federal Catalog System and are identical in format and type of information. Supplemental files covering technical drawings,

financial, and program data are also maintained in conjunction with these files but are normally controlled outside of the technical-catalog division. All LAM files are interdependent, their range and depth depending upon the complexity of the SDCP support system and the number of refinements desired. In most instances, custody and maintenance of master technical and catalog files and records is assigned to one organizational unit of the technical-catalog division.

Publications

Each SDCP prepares a Navy Stock List for the material under their cognisance. This involves the compilation, lay-out, illustration, and editing of the Navy Stock List for printing. In addition, certain related publications are prepared by each SDCP. Each Navy Stock List is patterned to meet the particular needs of each SDCP. However, a certain degree of standardization is maintained as to the title, format, and the frequency of issue of basic publications and publication changes. In general, a single unit, usually at a branch level, is responsible for the preparation of the Navy Stock List and related publications. Distribution control of publications is also maintained at each SDCP.

ANALYSIS AND INTERPRETATION OF DATA

This phase of the general approach encompasses the analysis and interpretation of organizational data and trends presented in the previous chapter. In general, it involves the appraisal of factors which have influenced the establishment of organizations and functions along their present lines and the adequacy of these organizations to perform their missions.

It may be noted from Figure (1-1) that the Technical and Catalog Divisions are established as separate entities. The Technical Division requires separate status on the basis of its role as a specialized agency for all technical matters. Historically, the Catalog Division was established primarily to meet the requirements of Public Law 436, the Royal Warrant for the Federal Cataloging Program. The magnitude and urgency of this program was such that it was necessary to create a separate cataloging organization. In 1960, the personnel strength of both the Catalog Division and the Technical Division is larger than other divisions, a factor that has supported their status as separate divisions.

Analysis of individual GPO organizational structures (Figure 1-1) with the exception of the General Service Supply Office, that the Catalog Division has been eliminated. In the case of the General Service Supply Office, a proposed Catalog Division has been established pending the transfer of this function from the Navy Central Catalog Center. The retention of the Independent Support Division at the Electronics Supply Office is also a

deviations in the organizational structure. It is interesting to note that "miniature SDP" divisions, the Special Weapons Division and the Fuel/Air Supply Division, are established within the Ordnance Supply Office and the Submarine Supply Office, respectively. In addition to inventory control functions, these divisions perform certain technical functions for specific categories of material. Establishment of these special divisions is attributed to the significance of their particular programs to national defense. Here, the conventional functional basis of work division has given way to organization on the basis of product.

Standard and specific SDOP technical and catalog organization structures down to the branch level can be noted in Figures (2-1, 2-2, 2-3). No single structure conforms with the standard organization structure. Within the Electronics Supply Office, Item Identification and Publications branches are assigned to a non-standard Equipment Support Division and the Administrative Services Division. In addition, all weapons list preparation, a technical division function, and provisioning coordination, a system planning function, are assigned to the Equipment Support Division. Within all other SDOPs, less CSO, catalog units and functions have been integrated into that of the Technical Division.

The disestablishment of the Catalog Division as a separate division at the technical SDOPs is attributable to several reasons. First, is the evolution of the identification and conversion phase of the National Catalog Program. The second factor is the similarity of certain identification functions to those performed by the technical divisions. Under the pressure of budgetary limitations, this area of closely related

effort was integrated for the sake of economy. Still another reason is the prevailing need to improve the efficiency and economy of internal operations by reducing the "length of the production line."

The most radical departure from the standard organization exists at the Electronics Supply Office. Here the major functional relative to equipment support such as provisioning coordination, allocation and preparation, and item identification have been integrated for the purpose of improving this program.

In spite of diversities in structure, each technical-catalog organization appears to be sound from the viewpoint of work division, span of control, scalar depth, and line-staff relationship. Nevertheless, the emergence of two basic patterns - the consolidation of identification functions as evidenced by three of the SDCPs reviewed, and the establishment of an equipment-support complex emphasizing the provisioning program at the Electronics Supply Office, raises the question of a program vs. functional basis for technical-catalog organization.

Functional Missions and Tasks

The broad functional mission assigned to SDCPs by the Bureau of Supplies and Accounts Manual and the functional mission assigned specifically to each SDCP are considered to be identical in intent. Further, inasmuch as technical-catalog functional tasks are assigned in support of the SDCP functional missions, it is logical to find that those tasks are also identical. From the above it is concluded that all SDCPs have been legally assigned the same type of mission and have thus been created for the same function or purpose.

Comparison of Major Technical-Catalog Functions

Functional statements prepared by each SDCP are almost identical. The similarity of these functions is attributable to the effort made by each SDCP to the functional statements prescribed in the Bureau Manual for technical and catalog functions and to the adequacy of the terminology in describing the functions performed. In the isolated instances where functional statements differ, they appear to fit specific interests of a particular SDCP. For example, several new functional statements pertaining to provisioning and equipment support policies by EDC is indicative of emphasis on equipment support programs, a matter normally under the scope of the System Planning Division. In all other respects a comparison of major technical-catalog functions indicates that each SDCP performs essentially the same function.

Material Missions

Inasmuch as each SDGP is created for the express purpose of rendering supply support for specific commodities of equipment, or for the management of specific categories of material as in the case of GSG, it is obvious that the material mission of each is different. It is significant that the equipments supported by these SDGPs range the ultimate in technical complexity, e.g., guided missile systems, special ordinance weapons, and nuclear propulsion plants, and their items of supply range from the most commonplace to the most sophisticated. With the exception of the General Stores Supply Office, where material assignments are made on a commodity basis, all SDGPs are primarily concerned with the support of technical equipment, major components, and end items. It is this area, with its extremes in complexity and peculiarity, that creates the greatest demand on organization. It is apparent that the technical liaison between a SDGP and the electronics industry would differ in many respects from the technical liaison maintained between a SDGP and industrial agencies engaged in the production of soap powder or nuclear equipment.

Staffing

Classifications of personnel assigned to comparable technical-catalog organizations, the grades at various levels within these units, and the ratio of supervisory to non-supervisory personnel are fundamentally the same. Civilian personnel of the Navy are classified on the basis of occupational specializations and the relative difficulty and responsibility of the duties performed. The classification process is based on formal classification standards and is usually determined by Navy

position classifications. Accordingly, classification throughout each SDOP is considered to be consistent and fair. Inasmuch as the duties and scope of individual positions are related to the structure and functioning of the organization, it is logical to assume that the functions within these similar organization counterparts are closely related.

Work Measurement

A uniform work measurement system is in effect for all technical-catalog operations. The uniformity of this system is attributable to compliance with BuSanA Publication 255, the directive under which a standard work measurement program is maintained. Although a single work measurement program is in effect, it is highly improbable that the weight and value of each work count is consistent among all SDOPs. This inconsistency is attributable to the myriad of clerical-technical actions that are undertaken and the various interpretations of effort that are applied to established work units. The outstanding impression gained from the review of this area is that a uniform work measurement program covering technical and catalog functions is maintained and that these functions, though performed at all SDOPs, are sufficiently related to be included within the scope of a single work measurement system.

Provisioning

Provisioning objectives are the same at all SDOPs performing provisioning. This is understandable since the basic policy and principles governing provisioning of any item of material is established by common doctrine by the Secretary of the Navy. To a large extent, the basic provisioning process, i.e., the internal functions of ordering, coordination,

technical review, stock control review, etc., and also similar review, the detailed practices and procedures for provisioning are established at the discretion of each SSCP and vary greatly between SSCP's.

It is this area of supply management - the fusion of the technical and supply elements - that offers the greatest challenge to the SSCP's.

At the Electronics Supply Office certain traditional Technical and Catalog Division functions have been integrated with the provisioning planning and coordinating functions of the System Planning Division for the express purpose of meeting provisioning requirements.

It is concluded that the provisioning process - a direct reflection of the SSCP material mission - is a focal point of operational complexity and should be organized to best serve the enterprise objectives.

Stock Coordination

The stock coordination function is primarily of a technical-administrative nature and is performed by the Technical Division of each SSCP. This function involves the review, selection, and guidance assignment of supply items on the basis of established guidelines. Although the detailed procedures necessary for this operation differ at each SSCP, the same principal procedural steps and source material are utilized by all SSCP's.

Item Identification

Of all the various supply functions at an Inventory Control Point, whether Army, Navy or Air Force, the item identification function is perhaps the most uniform. In all instances, the process of item identification per se is performed in accordance with strict instructions established by the Department of Defense. This is not to infer that each

action is identical, due to the fact that the same principles, terminology, tools, and processing procedures are consistent throughout each SDP. In this area uniform procedures are necessarily maintained without regard to organization structure. In some SDPs Item Identification is assigned to a specific organization as a single function. In others, this function is performed in addition to other technical actions by a single organization. It is concluded that in spite of past practices, this function can be performed in conjunction with other similar technical functions by the same organizational units.

Technical Library

Although the actual operations, practices, records, etc., vary in detail, the broad functions of the technical libraries at all SDPs are analogous.

Technical and Catalog Records

Technical and catalog records serve as a central repository for all information relative to technical and catalog actions and are an indispensable and integral element of these operations. Inasmuch as the data requirements appearing on the manually maintained technical records are essentially the same, it can be concluded that the technical functions, i.e., the decisions made on the basis of interpreting this information, are closely related. The IBM cards and manual descriptive cards for catalog data, which are a part of the federal supply catalog, are uniform in scope and detail. Therefore, it might be further concluded that catalog functions are closely allied to all SDPs. From the above, it is concluded that both technical and catalog records are utilized for all related purposes in each SDP.

CONCLUSIONS

Navy Stock Lists are similar publications served to the same end for publicizing the supply items required by the Navy. Although the basic publications are prepared to meet the needs of each SDCP, they contain standard in format. A uniform schedule is maintained for issue of all publications. Uniformity of Navy Stock Lists as to format and issuance at all SDCPs is attributable to the efforts made by BuS&P to standardize these publications. The same layout, compilation and illustration technique is employed at all SDCPs. In conclusion, the publications function is considered to be substantially the same at all SDCPs.

General Conclusions

From the analysis above it is concluded that:

1. The technical-catalog organization of each SDCP is basically similar.
2. The technical-catalog organization structure of each SDCP is different.
3. Technical-catalog functions of all SDCPs are fundamentally the same.
4. Provisioning functions of all SDCPs differ in scope and complexity.
5. Technical-catalog functions in all other areas are susceptible to uniform departmentation.

CHAPTER V

DEVELOPMENT OF SOLUTIONS AND RECOMMENDATIONS

The concluding analysis in the previous chapter indicates that SDCPs are performing identical functions and infers that a standard organization is appropriate for these functions. The study also reveals that standard guidelines and operating procedures exist for virtually every major function. From this it would appear that the existence of standard goals and objectives would preclude the need for a standard organization. It is emphasized that present organizations are sound. However, it is contended that a standard organization and the attendant improvement in work measurement and refinement in procedures and records will improve the overall effectiveness of SDCP operations. In order to support the position that a standard organization is practicable, it becomes the proponent to construct and substantiate, at least hypothetically, an "ideal" organization structure.

Developing the Organization Structure

Developing an organization structure from this diagnosis requires an architectural approach of balancing space and functions. Allowances for the human element are beyond the designer's reach. The construction of an "ideal" organization, guided by factors presented and developed within this report and a general feel for an recommending structure, is attempted below.

Definition. By predictive is meant that part of the process by which the identification of the color-coded objectives. Technical objectives are clearly illustrated by the terms of predictive and comparative. Further qualification is considered necessary.

Work Analysis. In the search for an ideal organization, it is necessary to reduce the work of the enterprise to the simplest denominator. Basically, the technical-catalog process consists of the collection of material and the clerical-technical maintenance of this material after induction into the system. The work effort can be logically categorized as (1) predictive, and (2) comparative. Staff and service functions are non-operational in the sense of technical endeavor and are therefore excluded from this concept. The latter are concerned with auxiliary or facilitating functions. Though out of balance in regard to overall operation these two concepts cover the functional nature of work. For example, the technical function of provisioning and shipment list preparation is of a predictive nature. In contrast, the functions of item identification, decisions as to interchangeability, development of purchase specifications, and standardization of items are of a comparative nature, i.e., decisions are based on comparison. In other words, a transformation of data, either directly or interpretatively, takes place. In general, the predictive process is not susceptible to reduction and depends upon the factors of time, whereas the comparative process leads to repetitive actions. This concept of work effort offers a somewhat different perspective for organizational development.

Technical Categorization. The effort of the technical-catalog process has been to reduce several different public relations policies to the same level and application of material based on time. The technical-catalog

and classification procedures have an increasing influence on technical-
 catalog functions. This process of military progress in weapons, com-
 munication, or transport material has a significant influence on creating a
 uniform classification structure.

Task Division. On the basis of (1) work process, and (2) staff
 and service function, representative functions of the technical-catalog
 divisions can be divided as follows:

<u>Work Process</u>	<u>Basic Functions</u>
Predictive	Determination of range and quantity of repair parts by provisioning.
	Establishing maintenance limits, allowance lists, repair parts lists.
Comparative	Determination of interchangeable items.
	Item identification.
	Performing functions pertaining to material acquisition.
	All other functions relating to technical analysis.
Support or Service	Compilation and distribution of publications.
	Stock monitoring, processing and maintenance of technical and catalog records.
	Administration of technical library.
	Coordinating provisioning and allow- ance list programs.

Conclusion. Construction of a logical organization structure
 appears practicable. A proposed organization is presented in Figure (2).

Summary of Proposed Organizational Changes

As shown in Figure 3, procurement and related functions are combined with production and marketing functions and placed in a separate division. This provides an independent and flexible structure for the complex area of procurement. This arrangement is in contrast to the present organization that places procurement under Finance Division.

Functions falling within the scope of "cooperative" work effort are also combined into a single unit. Departmentation on this basis serves to eliminate the confusion created by many overlapping functions, such as determining equivalency and interchangeability, previously assigned to Catalog and Technical Divisions. As pointed out above, the use of Federal catalog data as a basic language will assist in the simplification of functions.

The functions of procuring, technical library, and processing and maintenance of technical and catalog data, are departmentalized and placed under a single services unit. This is a logical grouping of units since these are supporting functions, are of an administrative and clerical nature, and do not require the technological skills of other units.

No representation is made to Administrative Support Services units such as the Supply Division of the Executive Secretariat. These units should be appraised as required.

In view of the diverse and specialized functions assigned to this organization, a staff group is located at Division level. This group would be responsible for all administrative work and management planning, or coordinating management within the scope of major organizational groups or the Management Planning Office.

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Summary

Basically, this organization differs from present organizations
 in that it provides a single flexible structure for the providing,
 program, divides work on the basis of work concept and function, provides
 a consistent and balanced structure for service function, creates a
 separate staff group, and reduces the span of control. This structure
 is adaptable to additional departmentation at the section level and to
 the reorganization of a higher level. Moreover, functions are divided on
 a basis that will provide for rapid expansion. In general, the organiza-
 tion is in accord with the principles of organization outlined earlier.

Other organization structures based on other approaches can be
 constructed. It would be presumptuous to claim this organization as the
 "ideal" structure. Nevertheless, it is a logical organization created
 in the light of current needs and is designed to meet the technical-sci-
 entific requirements of tomorrow.

Major Conclusions

The major conclusions of this study are as follows:

- 1) Supply Demand Control Points are performing identical technical and catalog functions with different organizational structure.
- 2) These organizations are subject to improvement.
- 3) The present standard organization for technical and catalog functions at Supply Demand Control Points is no longer appropriate.
- 4) A standard organization is feasible for all technical and catalog functions at Supply Demand Control Points.

Major Recommendations

It is recommended that:

- 1) The present standard organization for technical and catalog divisions of Supply Demand Control Points be discontinued.
- 2) The Bureau of Supplies and Accounts establish a new standard organization along the lines of the organization developed herein for technical and catalog functions of Supply Demand Control Points.

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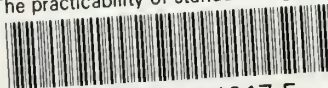
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